Claims

1. A method for detecting nucleic acids using solid-phase-bound primers which, by binding to their specific target sequence, undergo a conformation change which enables the selective cleavage of the products of the cyclic amplification reaction (trap release primer amplification (TRAmp)), comprising the steps

i) providing nucleic acids to be amplified,

ii) carrying out the amplification reaction using at least two primers, of which at least one is coupled with a solid phase,

iii) generation of a cleavage site within the solid-phase-bound primers by a conformation change resulting from binding to the primer-specific target sequence,

iv) releasing the reaction products into the aqueous phase by cleavage within the cleavage site generated in ii) by conformation change, e.g. with the aid of a restriction enzyme,

v) detecting of the amplification products formed in ii) via fluorescent-optical, radioactive, chemical, chromatographic or any other methods for detecting nucleic acids,

characterized in that

a) at least one of the primers employed for the amplification reaction comprises, in 5'-3' direction, the following elements: coupling site for the solid phase, a first target-sequence-specific segment, a cleavage site generable by conformation change, an optional sequence which may serve for product detection,

reamplification in a subsequent conventional PCR reaction (nested PCR), as primer binding site for a sequence reaction or for further functions, optional further sequence segments which serve for the stabilization of the double-strand-specific cleavage site, and a second sequence which is specific for the nucleic acid to be amplified,

b) *de-novo*-synthesized DNA molecules are transferred into the aqueous phase by cleavage with a restriction enzyme either still during the *de-novo* synthesis or after the PCR amplification cycles.